

RECEIVING WATER

Water Chemistry Results

Napa-Sonoma Marsh Restoration Project

DRAFT - Incomplete as of 01/08/02

ANALYTE	EPA Method	Report Limits (as noted)	RECEIVING WATERS				Criterion Approx. (as noted)
			SP-A	NR-A	NS-A	Average	
Total metals (mg/L)							
Arsenic	3020/6020	0.006	<0.006	<0.006	<0.006	ND	0.036
Cadmium	3020/6020	0.005	<0.005	<0.005	<0.005	ND	0.0022
Chromium	3020/6020	0.01	0.020	0.012	<0.010	0.012	0.18
Copper	3020/6020	0.01	<0.010	<0.010	<0.010	ND	0.0031
Lead	3020/6020	0.002	<0.002	0.003	<0.002	0.0017	0.0025
Nickel	3020/6020	0.01	<0.010	<0.010	<0.010	ND	0.0071
Selenium	3020/6020	0.02	<0.020	<0.020	<0.020	ND	0.005
Silver	3020/6020	0.005	<0.005	<0.005	<0.005	ND	0.0012
Zinc	3020/6020	0.02	<0.020	<0.020	<0.020	ND	0.058
Mercury	7470	0.0001	<0.0001	<0.0001	<0.0001	ND	2.5E-05
Antimony	3020/6020		<0.005	<0.005	<0.005	ND	0.014
Beryllium	3020/6020		<0.005	<0.005	<0.005	ND	VA
Thallium	3020/6020		<0.01	<0.01	<0.01	ND	0.0017
Sodium		100	7,120	5,880	6,260	6,420	
Potassium		10			215	215	
Dissolved Metals (mg/L)							
Arsenic	3020/6020	0.006	<0.006	<0.006	<0.006	ND	
Cadmium	3020/6020	0.005	<0.005	<0.005	<0.005	ND	
Chromium	3020/6020	0.01	<0.010	0.012	<0.010	0.00733	
Copper	3020/6020	0.01	<0.010	<0.010	<0.010	ND	
Lead	3020/6020	0.002	<0.002	0.003	<0.002	0.00167	
Nickel	3020/6020	0.01	<0.010	<0.010	<0.010	ND	
Selenium	3020/6020	0.02	<0.020	<0.020	<0.020	ND	
Silver	3020/6020	0.005	<0.005	<0.005	<0.005	ND	
Zinc	3020/6020	0.02	<0.020	<0.020	<0.020	ND	
Mercury	7470	0.0001	<0.0001	0.0002	<0.0001	0.0001	
Antimony	3020/6020		<0.005	<0.005	<0.005	0.0025	
Beryllium	3020/6020		<0.005	<0.005	<0.005	ND	
Thallium	3020/6020		<0.005	<0.005	<0.005	ND	
Sodium	3010/6010	500	7,430			7,430	
Potassium	3010/6010	100				ND	
Cyanide (mg/L)	CM 4500 CN	0.02	< 0.02	<0.02	<0.02	ND	0.001
Hexavalent Chromium (mg/L)	SM3500 CR		< 1.02	<0.02	<0.02	ND	0.011
Ammonia as N (mg/L)	SM 4500 NH ₃	0.1	0.3	0.3	0.5	0.37	
Nitrate as N (mg/L)	SM 4500 NO ₃	0.1	0.2	0.3	0.4	0.3	
Total Phosphorous (mg/L)	SM 4500 P E	0.05	0.7		<0.05	0.234	
pH	EPA 150.1	0.1	7.7	7.7	7.8	7.73	
BOD (mg/L)	SM 5210 B	1			68	68	
Turbidity NTU	SM2130 B	0.05	7.8	20.1	8.09	12.00	
TSS (mg/L)	SM 2540 D	20	26	72	20	39.33	
TDS (mg/L)	SM 2540 C	20	24,300	19,800	19,500	21,200	
Chloride (mg/L)		100	14,000	10,800	12,000	12,267	
Hardness (mg CaCO ₃ /L)	SM 2340B	10	4,310	3,440	3,870	3,873	
TKN (mg/L)	SM 4500NC	0.5					
Organic N (mg/L)	SM 4500 N	0.1	0.7	20.2	2.4	7.77	
DO (mg/L)			6.8	6.7	7.8	7.1	
Asbestos MF/L: Str			110	5.8	8	41.27	
Asbestos MF/L: >5 um			4	2	5.5	3.83	
Asbestos MF/L: >10 um			ND	ND	ND	ND	7000000
Fecal Coliform (Total) MPN/100mL			50	500	50	200	
Volatiles (ug/L)		<2-20					
Acetone	624/8260		<25.0	<25.0	<25.0	ND	
Acetonitrile	624/8260		<2.0	<2.0	<2.0	ND	
Acrolein (Propenal)	624/8260		<100.0	<100.0	<100.0	ND	320
Acrylonitrile	624/8260		<1.0	<1.0	<1.0	ND	0.059
Allyl chloride	624/8260		<1.0	<1.0	<1.0	ND	
Benzene	624/8260		<1.0	<1.0	<1.0	ND	1.2
Bromobenzene	624/8260		<1.0	<1.0	<1.0	ND	
Bromochloromethane	624/8260		<1.0	<1.0	<1.0	ND	
Bromodichloromethane	624/8260		<1.0	<1.0	<1.0	ND	0.56
Bromoform	624/8260		<1.0	<1.0	<1.0	ND	4.3
Bromomethane	624/8260		<2.0	<2.0	<2.0	ND	48
2-Butanone (MEK)	624/8260		<25.0	<25.0	<25.0	ND	
n-Butylbenzene	624/8260		<1.0	<1.0	<1.0	ND	
sec-Butylbenzene	624/8260		<1.0	<1.0	<1.0	ND	
tert-butylbenzene	624/8260		<1.0	<1.0	<1.0	ND	
Carbon disulfide	624/8260		<1.0	<1.0	<1.0	ND	
Carbon tetrachloride	624/8260		<2.0	<2.0	<2.0	ND	0.25
Chlorobenzene	624/8260		<1.0	<1.0	<1.0	ND	680
Chlorodichloromethane	624/8260		<1.0	<1.0	<1.0	ND	34(0.401)
Chloroethane	624/8260		<2.0	<2.0	<2.0	ND	VA
2-Chloroethyl vinyl ether	624/8260		<2.0	<2.0	<2.0	ND	VA
Chloroform	624/8260		<1.0	<1.0	<1.0	ND	VA
Chloromethane	624/8260		<2.0	<2.0	<2.0	ND	VA
2-Chlorotoluene	624/8260		<1.0	<1.0	<1.0	ND	
4-Chlorotoluene	624/8260		<1.0	<1.0	<1.0	ND	
1,2-Dibromo-3-chloropropane	624/8260		<2.0	<2.0	<2.0	ND	
1,2-Dibromoethane (EDB)	624/8260		<1.0	<1.0	<1.0	ND	
Dibromomethane	624/8260		<1.0	<1.0	<1.0	ND	
1,2-Dichlorobenzene	624/8260		<1.0	<1.0	<1.0	ND	2,700
1,3-Dichlorobenzene	624/8260		<1.0	<1.0	<1.0	ND	400
1,4-Dichlorobenzene	624/8260		<1.0	<1.0	<1.0	ND	400
trans-1,4-Dichloro-2-butene	624/8260		<2.0	<2.0	<2.0	ND	
Dichlorodifluoromethane	624/8260		<2.0	<2.0	<2.0	ND	
1,1-Dichloroethane	624/8260		<1.0	<1.0	<1.0	ND	VA
1,2-Dichloroethane	624/8260		<1.0	<1.0	<1.0	ND	0.38
1,1-Dichloroethene	624/8260		<1.0	<1.0	<1.0	ND	3.2(0.057)
cis-1,2-Dichloroethene	624/8260		<1.0	<1.0	<1.0	ND	
trans-1,2-Dichloroethene	624/8260		<1.0	<1.0	<1.0	ND	700
1,2-Dichloropropane	624/8260		<1.0	<1.0	<1.0	ND	0.52
1,3-Dichloropropane	624/8260		<1.0	<1.0	<1.0	ND	10
2,2-Dichloropropane	624/8260		<1.0	<1.0	<1.0	ND	
1,1-Dichloropropene	624/8260		<1.0	<1.0	<1.0	ND	
cis-1,3-Dichloropropene	624/8260		<1.0	<1.0	<1.0	ND	
trans-1,3-Dichloropropene	624/8260		<1.0	<1.0	<1.0	ND	
Diethyl ether	624/8260		<2.0	<2.0	<2.0	ND	
Ethylbenzene	624/8260		<1.0	<1.0	<1.0	ND	3,100
Hexachlorobutadiene	624/8260		<1.0	<1.0	<1.0	ND	50(0.44)
Hexachloroethane	624/8260		<1.0	<1.0	<1.0	ND	8.9(1.9)
2-Hexanone	624/8260		<5.0	<5.0	<5.0	ND	
Iodomethane	624/8260		<1.0	<1.0	<1.0	ND	
Isopropylbenzene	624/8260		<1.0	<1.0	<1.0	ND	
Methylene chloride	624/8260		<5.0	<5.0	<5.0	ND	4.7
Methyl tert-butyl ether	624/8260		<1.0	<1.0	1.2	0.73	
4-Methyl-2-pentanone	624/8260		<25.0	<25.0	<25.0	ND	
Naphthalene	624/8260		<2.0	<2.0	<2.0	ND	VA
n-Propylbenzene	624/8260		<1.0	<1.0	<1.0	ND	
Styrene	624/8260		<1.0	<1.0	<1.0	ND	
1,1,1,2-Tetrachloroethane	624/8260		<1.0	<1.0	<1.0	ND	
1,1,2,2-Tetrachloroethane	624/8260		<2.0	<2.0	<2.0	ND	11(0.17)
Tetrachloroethene	624/8260		<1.0	<1.0	<1.0	ND	8.85(0.8)
Toluene	624/8260		<1.0	<1.0	<1.0	ND	6,800
1,2,3-Trichlorobenzene	624/8260		<1.0	<1.0	<1.0	ND	
1,2,4-Trichlorobenzene	624/8260		<1.0	<1.0	<1.0	ND	VA
1,1,1-Trichloroethane	624/8260		<2.0	<2.0	<2.0	ND	VA
1,1,2-Trichloroethane	624/8260		<1.0	<1.0	<1.0	ND	42(0.60)
Trichloroethane	624/8260		<1.0	<1.0	<1.0	ND	2.7
Trichlorofluoromethane	624/8260		<2.0	<2.0	<2.0	ND	
1,2,3-Trichloropropane	624/8260		<2.0	<2.0	<2.0	ND	
1,1,2-Trichlorotrifluoroethane	624/8260		<5.0	<5.0	<5.0	ND	
1,2,4-Trimethylbenzene	624/8260		<1.0	<1.0	<1.0	ND	
1,3,5-Trimethylbenzene	624/8260		<1.0	<1.0	<1.0	ND	
Vinyl acetate	624/8260		<5.0	<5.0	<5.0	ND	
Vinyl chloride	624/8260		<2.0	<2.0	<2.0	ND	2(525)
m,p-Xylene	624/8260		<2.0	<2.0	<2.0	ND	
o-Xylene	624/8260		<1.0	<1.0	<1.0	ND	
Semi-Volatile Organics (ug/L)							
Pyridine	625/8270		<10.0		ND		
Bis(2-Chloroethyl) ether	625/8270		<2.0		ND	1.4(0.031)	
2-Chlorophenol	625/8270		<2.0		ND	120	
Phenol	625/8270		<2.0		ND	21,000	
1,3-Dichlorobenzene	625/8270		<2.0		ND	400	
1,4-Dichlorobenzene	625/8270		<2.0		ND	400	
1,2-Dichlorobenzene	625/8270		<2.0		ND	2700	
Benzyl alcohol	625/8270		<4.0		ND		
Bis(2-chloroisopropyl)ether	625/8270		<2.0		ND	1,400	
2-Methylphenol	625/8270		<2.0		ND		
Hexachloroethane	625/8270		<2.0		ND		
N-Nitroso-di-n-propylamine	625/8270		<2.0		ND	0.005	
4/3-Methylphenol	625/8270		<2.0		ND	VA	
Nitrobenzene	625/8270		<2.0		ND	17	
Isophorone	625/8270		<2.0		ND	8.4	
2-Nitrophenol	625/8270		<4.0		ND	VA	
2							

RECEIVING WATER

Soil Chemistry Results

Napa-Sonoma Marsh Restoration Project

DRAFT - Incomplete as of 01/08/02

ANALYTE	EPA Method	MDL	Reporting Limits (as noted)	RECEIVING WATERS		
				NR-A	NS-A	Average
General Chemistry						
pH	9045C		0.1	7.9	7.6	<u>7.8</u>
Total Phosphorous (mg/kg)	65.3 MOD11L1457		12	360	290	<u>325</u>
Chloride (mg/Kg)	SMEWW 4500 CL C			11,600	12,900	<u>12,250</u>
Organic N	SMEWW 4500N-A	5.0	5.0	d 1,290	d 1,610	<u>1,450</u>
% Total Solids	SMEWW 2540G			45.2	43.6	<u>44.4</u>
Total Metals (mg/Kg) dry wt						
Arsenic	3050/6020		2.0	12.4	14.3	<u>13.35</u>
Cadmium	3050/6020		0.3	0.40	0.50	<u>0.45</u>
Chromium	3050/6020		5.0	80.8	85.2	<u>83</u>
Copper	3050/6020		5.0	50.5	50.4	<u>50.45</u>
Lead	3050/6020		5.0	29.0	29.9	<u>29.45</u>
Nickel	3050/6020		5.0	82.0	93.4	<u>87.7</u>
Selenium	3050/6020		0.1	0.9 J	1.9 J	<u>1.4</u>
Silver	3050/6020		0.2	0.40	0.40	<u>0.4</u>
Zinc	3050/6020		1.0	121.0	130.0	<u>125.5</u>
Mercury	7471/7471 M		0.02	0.37	0.34	<u>0.355</u>
Sodium	3050/6020	1.0	1.0	9,880	9,190	<u>9,535</u>
Potassium	6010	1.0	1.0	4,530	4,250	<u>4,390</u>
Semi-Volatile Organics (µg/Kg)						
Pyridine	3540C/3640A		100	< 221	< 229	ND
Bis(2-Chloroethyl) ether	3540C/3640A		25	< 55	< 57	ND
2-Chlorophenol	3540C/3640A		20	< 44	< 46	ND
Phenol	3540C/3640A		30	< 66	< 69	ND
1,3-Dichlorobenzene	3540C/3640A		20	< 44	< 46	ND
1,4-Dichlorobenzene	3540C/3640A		20	< 44	< 46	ND
1,2-Dichlorobenzene	3540C/3640A		20	< 44	< 46	ND
Benzyl alcohol	3540C/3640A		75	< 166	< 172	ND
Bis(2-chloroisopropyl)ether	3540C/3640A		25	< 55	< 57	ND
2-Methylphenol	3540C/3640A		20	< 44	< 46	ND
Hexachloroethane	3540C/3640A		20	< 44	< 46	ND
N-Nitroso-di-n-propylamine	3540C/3640A		30	< 66	< 69	ND
4/3-Methylphenol	3540C/3640A		40	< 88	< 92	ND
Nitrobenzene	3540C/3640A		20	< 44	< 46	ND
Isophorone	3540C/3640A		20	< 44	< 46	ND
2-Nitrophenol	3540C/3640A		20	< 44	< 46	ND
2,4-Dimethylphenol	3540C/3640A		80	< 177	< 183	ND
Bis(2-Chloroethoxy)methane	3540C/3640A		20	< 44	< 46	ND
2,4-Dichlorophenol	3540C/3640A		20	< 44	< 46	ND
1,2,4-Trichlorobenzene	3540C/3640A		20	< 44	< 46	ND
Naphthalene	3540C/3640A		20	< 44	< 46	ND
4-Chloroaniline	3540C/3640A		100	< 221	< 229	ND
Hexachlorobutadiene	3540C/3640A		20	< 44	< 46	ND
2-Methylnaphthalene	3540C/3640A		20	< 44	< 46	ND
4-Chloro-3-methylphenol	3540C/3640A		20	< 44	< 46	ND
Hexachlorocyclopentadiene	3540C/3640A		50	< 111	< 115	ND
2,4,6-Trichlorophenol	3540C/3640A		30	< 66	< 69	ND
2,4,5-Trichlorophenol	3540C/3640A		30	< 66	< 69	ND
2-Chloronaphthalene	3540C/3640A		20	< 44	< 46	ND
2-Nitroaniline	3540C/3640A		50	< 111	< 115	ND
Acenaphthylene	3540C/3640A		20	< 44	< 46	ND
Dimethylphthalate	3540C/3640A		20	< 44	< 46	ND
2,6-Dinitrotoluene	3540C/3640A		20	< 44	< 46	ND
Acenaphthene	3540C/3640A		20	< 44	< 46	ND
3-Nitroaniline	3540C/3640A		100	< 221	< 229	ND
2,4-Dinitrophenol	3540C/3640A		100	< 221	< 229	ND
Dibenzofuran	3540C/3640A		20	< 44	< 46	ND
2,4-Dinitrotoluene	3540C/3640A		20	< 44	< 46	ND
4-Nitrophenol	3540C/3640A		70	< 155	< 161	ND
Fluorene	3540C/3640A		20	< 44	< 46	ND
4-Chlorophenyl-phenylether	3540C/3640A		20	< 44	< 46	ND
Diethylphthalate	3540C/3640A		20	< 44	< 46	ND
4-Nitroaniline	3540C/3640A		70	< 155	< 161	ND
N-Nitrosodiphenylamine	3540C/3640A		35	< 77	< 80	ND
4,6-Dinitro-2-methylphenol	3540C/3640A		50	< 111	< 115	ND
4-Bromophenyl-phenylether	3540C/3640A		20	< 44	< 46	ND
Hexachlorobenzene	3540C/3640A		20	< 44	< 46	ND
Pentachlorophenol	3540C/3640A		40	< 88	< 92	ND
Phenanthrene	3540C/3640A		20	< 44	< 46	ND
Anthracene	3540C/3640A		20	< 44	< 46	ND
Carbazole	3540C/3640A		60	< 133	< 138	ND
Di-n-butylphthalate	3540C/3640A		40	< 88	< 92	ND
Fluoranthene	3540C/3640A		20	< 44	< 46	ND
Pyrene	3540C/3640A		20	< 44	< 46	ND
Benzidine	3540C/3640A		150	< 332	< 344	ND
Butylbenzylphthalate	3540C/3640A		40	< 88	< 92	ND
Benzo(a)anthracene	3540C/3640A		20	< 44	< 46	ND
Chrysene	3540C/3640A		20	< 44	< 46	ND
3,3-Dichlorobenzidine	3540C/3640A		150	< 332	< 344	ND
Bis(2-Ethylhexyl)phthalate	3540C/3640A		45	< 100	< 103	ND
Di-n-octylphthalate	3540C/3640A		40	< 88	< 92	ND
Benzo(b)fluoranthene	3540C/3640A		20	< 44	< 46	ND
Benzo(k)fluoranthene	3540C/3640A		20	< 44	< 46	ND
Benzo(a)pyrene	3540C/3640A		20	< 44	< 46	ND
Indeno[1,2,3-cd]pyrene	3540C/3640A		30	< 66	< 69	ND
Dibenz[a,h]anthracene	3540C/3640A		40	< 88	< 92	ND
Benzo[g,h,i]perylene	3540C/3640A		40	< 88	< 92	ND
Pesticides (µg/Kg) PQL(µg/L)						
Azinphosmethyl (Guthion)	8141A	100		< 100	< 100	ND
Bolstar	8141A	50		< 50	< 50	ND
Chlorpyrifos (Dursban)	8141A	50		< 50	< 50	ND
Coumaphos	8141A	100		< 100	< 100	ND
Defl/Morphos	8141A	50		< 50	< 50	ND
Demeton (total)	8141A	100		< 100	< 100	ND
Diazinon	8141A	50		< 50	< 50	ND
Dichlorvos	8141A	100		< 100	< 100	ND
Dimethoate	8141A	100		< 100	< 100	ND
Disulfoton	8141A	50		< 50	< 50	ND
EPN	8141A	50		< 50	< 50	ND
Ethion	8141A	50		< 50	< 50	ND
Ethoprop	8141A	50		< 50	< 50	ND
Fensulfthion	8141A	250		< 250	< 250	ND
Fenthion	8141A	50		< 50	< 50	ND
Malathion	8141A	50		< 50	< 50	ND
Mevinphos	8141A	350		< 350	< 350	ND
Naled	8141A	250		< 250	< 250	ND
Parathion, ethyl	8141A	50		< 50	< 50	ND
Parathion, methyl	8141A	50		< 50	< 50	ND
Phorate	8141A	50		< 50	< 50	ND
Prowl (pendimethalin)	8141A	50		< 50	< 50	ND
Ronnel	8141A	50		< 50	< 50	ND
Strophos	8141A	50		< 50	< 50	ND
Suffotep	8141A	50		< 50	< 50	ND
Tokuthion	8141A	50		< 50	< 50	ND
Trichloronate	8141A	50		< 50	< 50	ND
Trifluralin	8141A	50		< 50	< 50	ND
Organochlorine Pesticides (µg/Kg)						
Aldrin	3540C/3640A			< 1.17	< 1.22	ND
alpha-BHC	3540C/3640A			< 2.21	< 2.29	ND
beta-BHC	3540C/3640A			< 1.36	< 1.41	ND
gamma-BHC	3540C/3640A			< 1.39	< 1.44	ND
delta-BHC	3540C/3640A			< 1.42	< 1.47	ND
Chlordane	3540C/3640A			< 5.23	< 5.42	ND
2,4-DDD	3540C/3640A			< 1.36	< 1.41	ND
4,4-DDD	3540C/3640A			< 1.36	< 1.41	ND
2,4-DDE	3540C/3640A			< 1.18	< 1.23	ND
4,4-DDE	3540C/3640A			< 1.18	< 1.23	ND
2,4-DDT	3540C/3640A			< 2.21	< 2.29	ND
4,4-DDT	3540C/3640A			< 2.21	< 2.29	ND
Total DDT	3540C/3640A			< 2.21	< 2.29	ND
Dieldrin	3540C/3640A			< 1.44	< 1.49	ND
Endosulfan I	3540C/3640A			< 1.80	< 1.87	ND
Endosulfan II	3540C/3640A			< 1.88	< 1.95	ND
Endosulfan Sulfate	3540C/3640A			< 1.59	< 1.65	ND
Endrin	3540C/3640A			< 1.66	< 1.72	ND
Endrin Aldehyde	3540C/3640A			< 1.79	< 1.86	ND
Heptachlor	3540C/3640A			< 1.85	< 1.92	ND
Heptachlor Epoxide	3540C/3640A			< 1.84	< 1.90	ND
Toxaphene	3540C/3640A			< 9.70	< 10.10	ND
PCB's (µg/Kg)						
Arochlor 1016	3540C/3640A			< 5.1	< 5.3	ND
Arochlor 1221	3540C/3640A			< 5.1	< 5.3	ND
Arochlor 1232	3540C/3640A			< 5.1	< 5.3	ND
Arochlor 1242	3540C/3640A			< 5.1	< 5.3	ND
Arochlor 1248	3540C/3640A			< 5.1	< 5.3	ND
Arochlor 1254	3540C/3640A			< 5.1	< 5.3	ND
Arochlor 1260	3540C/3640A			< 5.1	< 5.3	ND
Total Aroclors	3540C/3640A			< 5.1	< 5.3	ND